Buybacks as a Tool for Debt Management

February 2015

TBAC Charge

In the early 2000s, Treasury used buybacks as a tool to enhance the liquidity of its benchmark issuance during a time of budgetary surpluses. We would like the Committee to comment on the use of buybacks during a time of budgetary deficits, and whether such a tool could be used to assist Treasury in managing the maturity structure of debt portfolios, secondary market liquidity, and cash.

Treasury Experience with Buybacks from 2000 to 2002

- Treasury bought back $67.5 billion of outstanding bonds from March 2000 to April 2002
  - Involved 45 reverse auction operations
- Buyback program was implemented in response to shrinking financing needs
  - Federal budget turned to a surplus in 1998
  - CBO forecasted increases in surplus going forward from that point
- Treasury had reduced its new debt issuance substantially
  - TBAC in 1999 argued that “individual issues are now near a minimum size that would allow sufficient liquidity to maintain benchmark status”
- Buyback program ended once funding needs began to increase

Buybacks as Part of Debt Management

- The budget deficit (primary deficit plus interest expenses) has to be met by changes in the amount of outstanding Treasury debt (or changes in cash balance)
- Those changes determined by:

  Change in outstanding debt = Net debt issuance – Debt buybacks, or

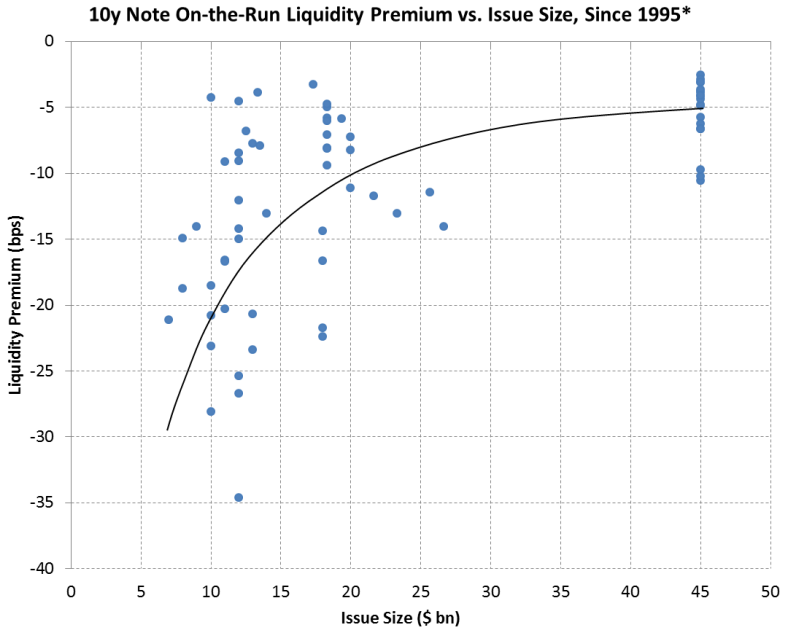
  Change in outstanding debt = Gross debt issuance – Maturing debt – Debt buybacks
- With buybacks set at zero, any variation in the Treasury's funding need (the change in outstanding debt plus maturing debt) has to be met by changing gross debt issuance
  - But Treasury has emphasized the importance of regular and predictable issuance
- Treasury could consider running a program of regular buybacks with the ability to adjust the size over time (for purposes discussed in following slides)

Buybacks Could Serve Several Purposes

- **Enhance liquidity of Treasury securities**
  - Allow larger on-the-run issue sizes
  - Create liquidity for off-the-run issues
- **Smooth gross issuance of debt over time**
  - Maintain sizes of coupon issues during periods of temporary overfunding
- **Reduce short-run variation in Treasury bill issuance or cash balance**
  - Provide another tool for managing seasonal fluctuations in funding needs
- **Reduce maturity peaks in outstanding debt**
  - Allow pre-funding of large maturity dates to lower refinancing risk
- **Allow more efficient changes to Treasury debt profile**
  - Achieve faster adjustments to debt profile (e.g., WAM) over time

Buybacks Could Allow Larger On-the-Run Issues

- On-the-run Treasury securities provide liquidity that is highly valued by market participants
- Buybacks allow Treasury to separate on-the-run issue sizes from its funding needs
  - Treasury can optimize the size of these issues, rather than having it imposed by budget needs
- However, it is unclear that current sizes are not sufficiently large

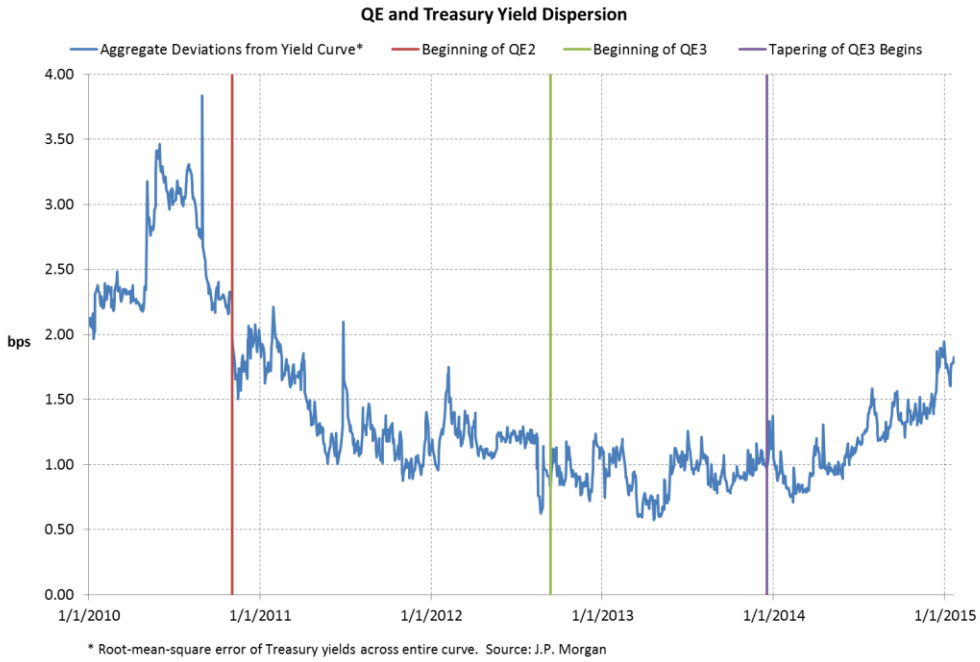


* Sample period excludes 8/2007 - 2/2010. Liquidity premium is calculated as the average deviation of the note's yield from a smoothed off-the-run Treasury yield curve over the the note's first 3 months. Issue size is also calculated as an average over the note's first 3 months (incorporating re-openings). Source: J.P. Morgan

- The liquidity premium on on-the-run issues has been related to their size
- On-the-run debt was scarce in the early 2000s and commanded a high premium
- Issue sizes have now reached levels at which the average liquidity premium is smaller and perhaps less sensitive to size

Buybacks Could Improve Liquidity of Off-the-Run Issues

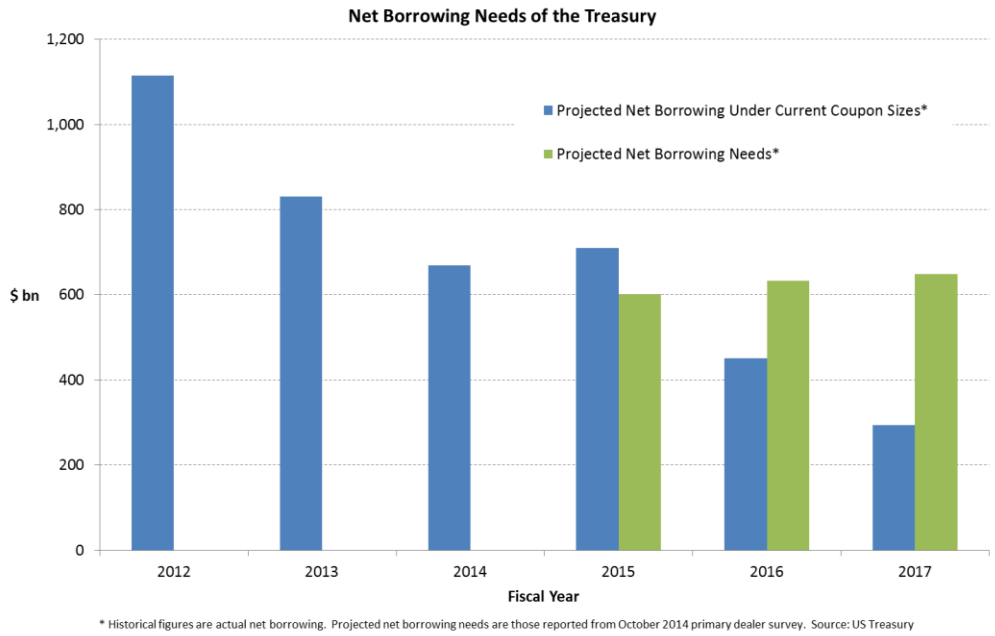
- Regular buybacks offer liquidity events for off-the-run Treasury securities
  - Help guard against individual issues becoming very illiquid or idiosyncratically cheap
  - Could be particularly helpful during periods of market dysfunction or stress
- Similar effects were observed during the Fed's asset purchase programs
- Any reduction of illiquidity discount should also benefit newly issued Treasury securities



- Fed purchases led to a reduction in the dispersion of Treasury yields
- This pattern occurred because the Fed purchased less liquid, off-the-run issues
- Dispersion began to increase again as Fed purchases diminished

Buybacks Could Span Temporary Periods of Overfunding

- Buybacks could be used to maintain consistent issue sizes for coupon securities during periods of overfunding
  - Approach might be appealing if issue sizes would have to increase again beyond the overfunded period
- The potential for overfunding in 2014-2015 provided an example

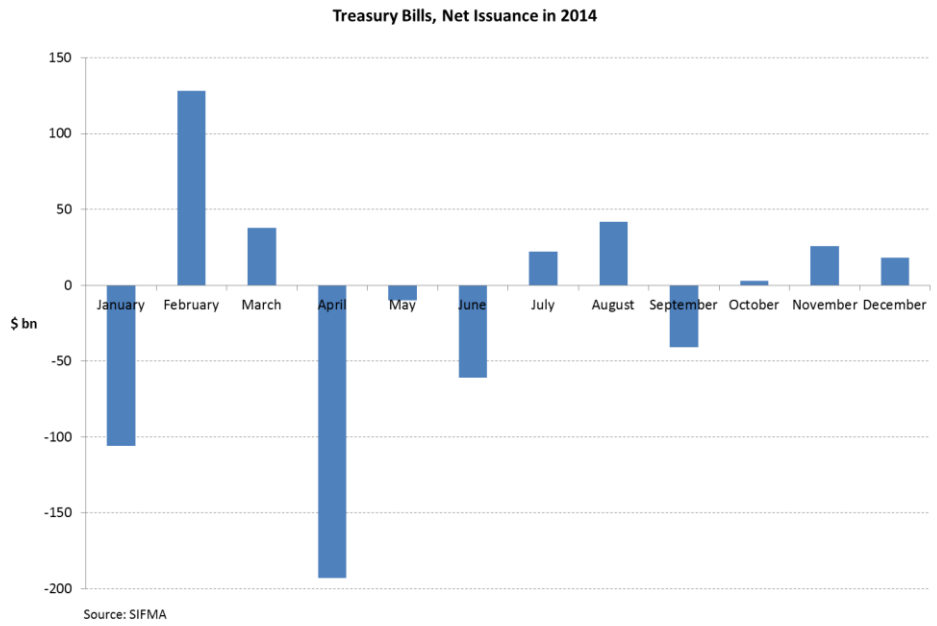


* Historical figures are actual net borrowing. Projected net borrowing needs are those reported from October 2014 primary dealer survey. Source: US Treasury

- Treasury cut coupon sizes in recent years given falling funding needs
- It cut 2s and 3s further last year to address overfunding in 2014-2015
- However, Treasury is expected to be underfunded in 2016 and beyond with the current issue sizes
- An alternative approach would have left issue sizes unchanged in 2014 and conducted a buyback program of $40 to 50 billion last year

Buybacks Could Dampen Swings in Bill Issuance/Cash Balances

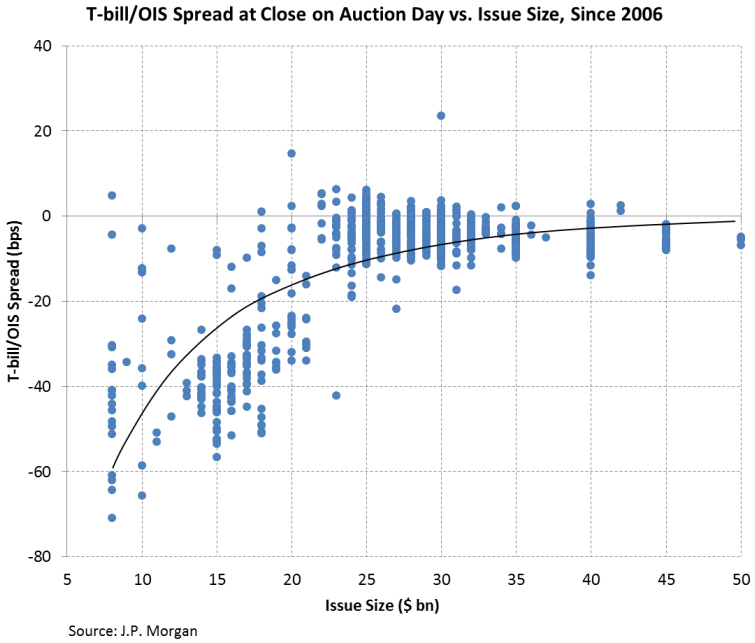
- Treasury faces considerable variation in funding needs at a higher frequency
  - This variation is largely due to timing mismatch of revenues and expenditures
- Historically, much of this variation has been met through large fluctuations in bill issuance
  - Also produces short-term swings in Treasury cash balances when bills cannot be cut sufficiently
- Buybacks could be used to dampen these seasonal swings in bill issuance/cash balances



- Issuance of bills varies over a wide range over the year
- Treasury could keep a steadier, larger amount of outstanding bills on average
- It would then use buybacks to reduce the excess funding realized at times

Buybacks Could Dampen Swings in Bill Issuance/Cash Balances

- However, there are limits on the scope of using buybacks for this purpose
  - Buybacks would be much smaller than the variation in bills
  - Operations would have to focus on issues with very short remaining maturities
- To date, there has been little apparent cost due to the variation in bill issuance
  - Important issue is whether this will remain the case going forward

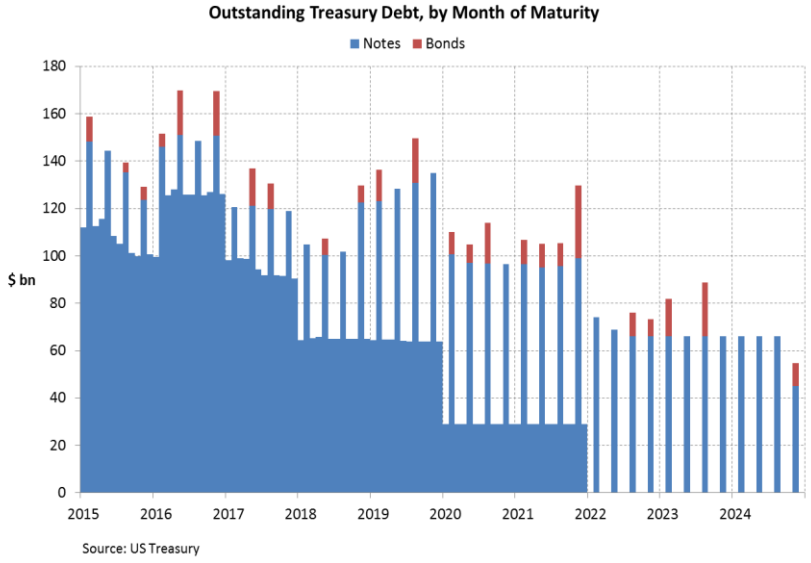


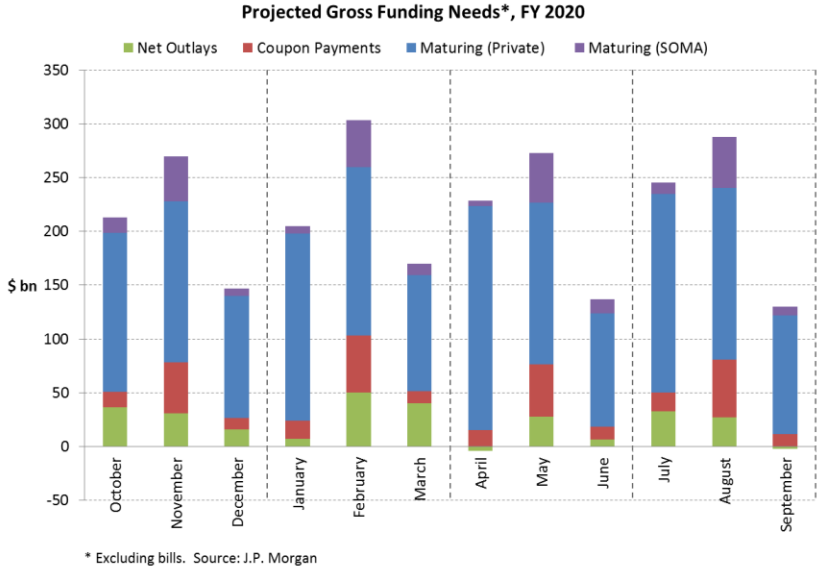
Source: J.P. Morgan

- Bills have served as a very efficient shock absorber
- Treasury has been able to vary bill size with little apparent cost (relationship does not appear to be convex)
- However, that has taken place in a high liquidity, low rate environment

Buybacks Could Reduce Maturity Peaks in Outstanding Debt

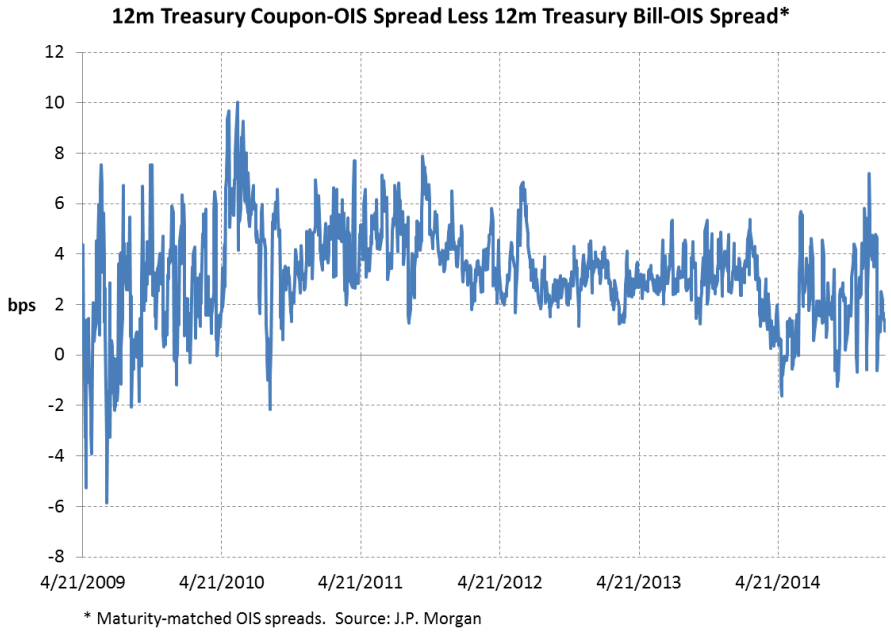
- Treasury faces an uneven profile of maturing debt
  - Mid-quarter months are projected to have large amounts of maturing debt
  - This pattern owes in part to the regular re-opening of 10- and 30-year securities
  - There is also some unevenness of maturities across different years
- This pattern creates considerable variation in gross funding needs
  - This variation could result in increased rollover risk
  - Makes it more challenging to smooth gross coupon issuance (need to use bills more extensively)
  - Requires larger cash balance to guard against operational disruptions





Buybacks Could Reduce Maturity Peaks in Outstanding Debt

- Buybacks could reduce the amount of debt maturing on peak dates
- One approach would be to purchase coupon securities as they approach maturity
  - Allows the Treasury to essentially pre-fund the maturing debt
  - Treasury could also smooth maturity profile farther in advance if consistent with other objectives
- Short-dated coupons might be attractive to purchase

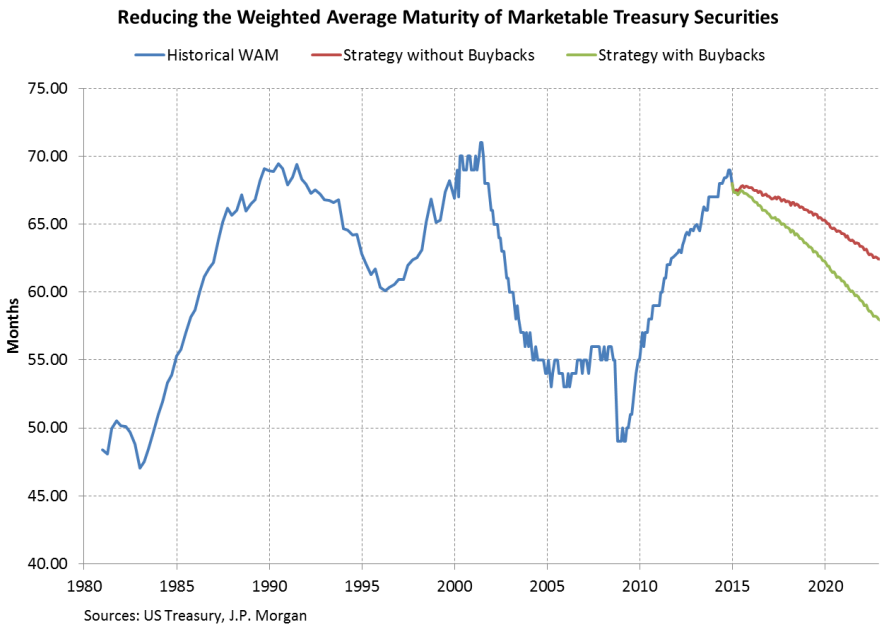


* Maturity-matched OIS spreads. Source: J.P. Morgan

- Short-dated coupons trade cheap relative to bills
- This pattern makes them more attractive to purchase
- Many other debt managers focus buyback programs on short-dated coupon securities

Buybacks Could Allow More Efficient Changes to Debt Profile

- Treasury should have the flexibility to alter broad characteristics of its debt over time
  - For example, implementing any decisions to change the WAM or the proportion of bills
- Buybacks could make the implementation of these changes quicker and more efficient
  - Especially if Treasury were reluctant to change new issue sizes abruptly



- As an illustrative example, consider an effort to return WAM to its historical average
- This adjustment could be achieved by adjusting issuance without using buybacks
- However, the adjustment would occur quite slowly if Treasury were reluctant to make large changes to issue sizes
- A buyback program of $100 billion per year would accelerate the adjustment to the WAM

Concerns about a Buyback Program

- Costs of operating on both sides of the market
  - Pay bid-offer spread, plus additional concessions at auctions and at buyback operations
  - Costs presumably increase with size of operations, perhaps limiting the overall program size
  - However, Treasury would be capturing more liquidity premium, mitigating this concern
  - It would be important for the Treasury to monitor such costs if it were to implement buybacks
- Discomfort with Treasury interfering in market functioning
  - Some may worry about the market functioning consequences of additional Treasury activity
  - However, net supply would basically remain on same path that it would without buybacks; Treasury would just be achieving that path in a more effective manner
  - Buybacks could improve market functioning by creating more liquid instruments
- Accounting issue with buying premium bonds
  - Premiums on purchased securities count as current expenditures, so they would increase the reported budget deficit
  - However, the premium is just the market price for reducing future excess interest payments
  - This issue could interact with the debt limit, since the limit is measured on par debt

International Experience with Debt Buybacks

- Many countries conduct either debt buybacks or debt exchange programs
- A recent OECD survey indicated that 29 of the 33 countries surveyed had used such programs
  - Some countries conduct buybacks on regular basis, while others conduct them on an ad-hoc basis

Table 1: Use of exchanges and buybacks in OECD countries

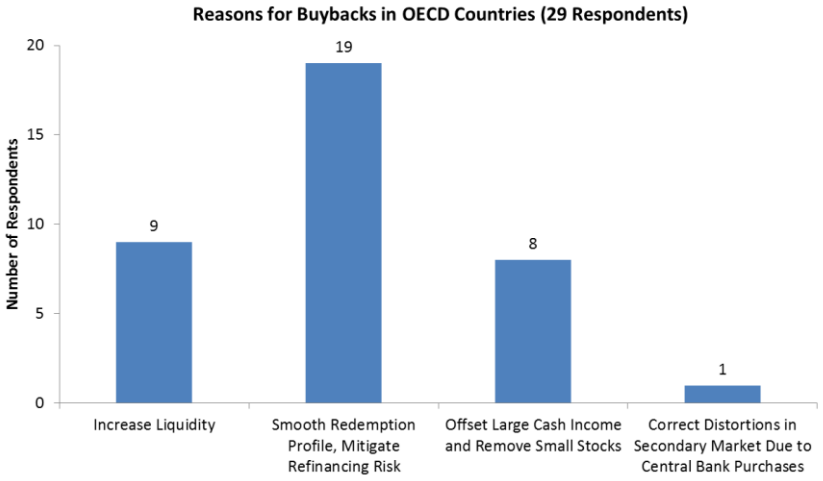
		Bond Exchange	Bond Buyback			Bond Exchange	Bond Buyback
1	Australia	●	●	18	Japan	●	●
2	Austria	●	●	19	Korea	NA	NA
3	Belgium	●	●	20	Luxembourg	●	●
4	Canada	●	●	21	Mexico	●	●
5	Chile	●	●	22	Netherlands	●	●
6	Czech Rep.	●	●	23	New Zealand	●	●
7	Denmark	●	●	24	Norway	●	●
8	Estonia	●	●	25	Poland	●	●
9	Finland	●	●	26	Portugal	●	●
10	France	●	●	27	Slovak Rep.	●	●
11	Germany	●	●	28	Slovenia	●	●
12	Greece	●	●	29	Spain	●	●
13	Hungary	●	●	30	Sweden	●	●
14	Iceland	●	●	31	Switzerland	●	●
15	Ireland	●	●	32	Turkey	●	●
16	Israel	●	●	33	UK	●	●
17	Italy	●	●	34	USA	●	●

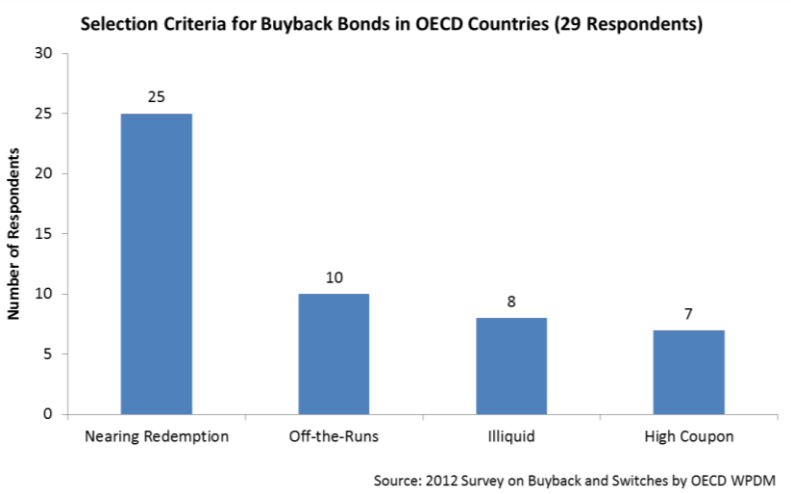
● : Conducts buyback/switches
● : Do not conduct
NA : Not Available

Source: 2012 Survey on Buyback and Switches by OECD WPDM, as reported in *OECD Working Papers on Sovereign Borrowing and Public Debt Management*, No. 5.

International Experience with Debt Buybacks

- Buyback operations are usually targeted at securities that are approaching maturity
- Most respondents said that the purpose was “to smooth the redemption profile” or “to mitigate refinancing risk”



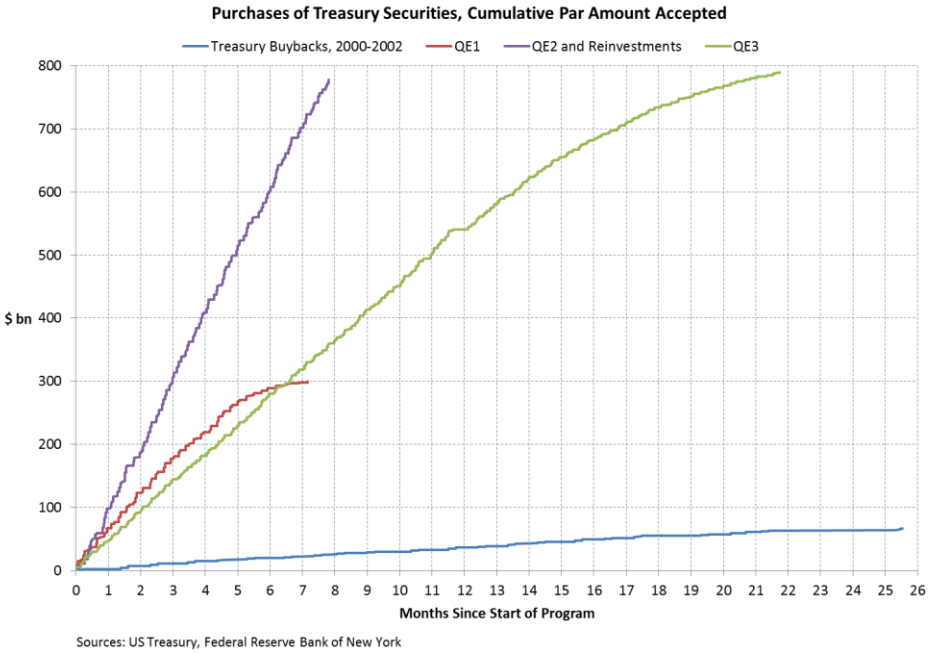


The Implementation of Buybacks

- Operational experience from Fed asset purchases
  - Have operational infrastructure and experienced staff for implementation
  - Can rely on the past experience of Treasury and Fed to guide operational details
- Initial thoughts on operational procedures
  - Conduct buybacks as reverse auctions over defined set of securities
  - Accept offers based on cheapness relative to other similar Treasury securities
  - Place ownership limits on individual CUSIPs
  - Exclude particular issues as needed
  - Exclude STRIPS
- Aim for some degree of “regular and predictable” activity for buybacks
  - Likely to be some benefit from regular presence in the market
  - But also want the flexibility to adjust sizes and composition over time, given some of the objectives noted above
  - Adjustments should not be so abrupt to create meaningful uncertainty about gross issuance

Capacity for Treasury Buybacks

- Buybacks would proceed at a much slower pace than the Fed's purchases in recent years
  - Fed's programs bought at a rapid pace, reflecting their intention to influence financial conditions
  - Buybacks would instead be focused on the objectives described above
- Purchases of up to $100 billion per year could likely be achieved with little difficulty

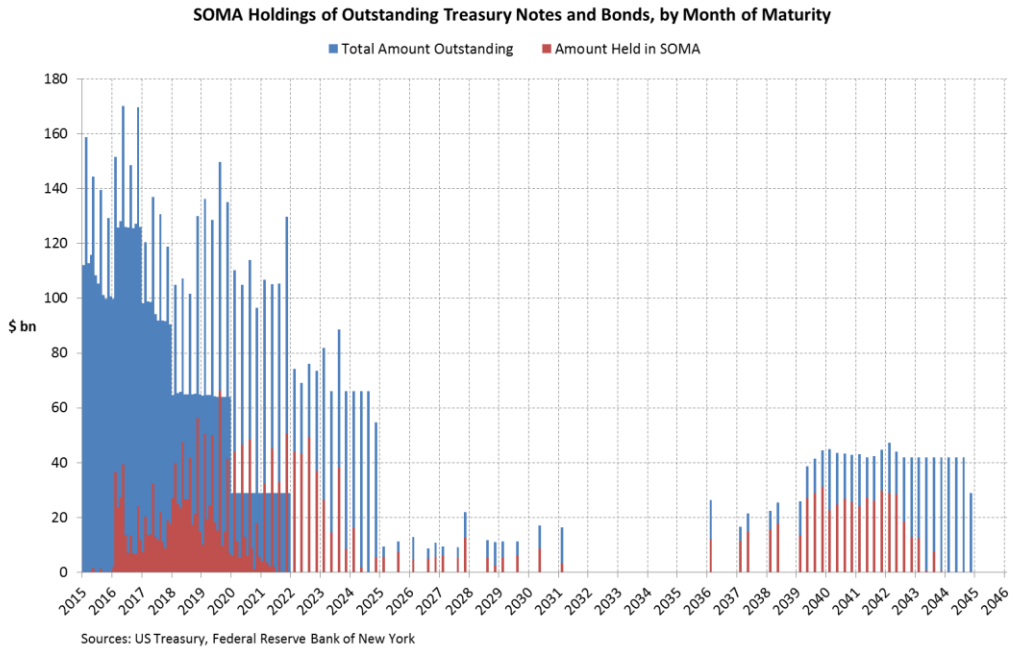


Sources: US Treasury, Federal Reserve Bank of New York

- Fed programs bought at a pace as high as $100 billion per month
- Buyback program would be at a fraction of the pace of Fed purchases
- Nevertheless, the Fed's programs showed that sizable purchases can be achieved without notable detriment to market functioning

Capacity for Treasury Buybacks

- Some capacity for buybacks has been used up by the Fed's purchase programs
  - The extent of the Fed's holdings varies across different maturity regions
- Still considerable room for a buyback program across a wide range of maturities



- Fed owns a meaningful share of some segments of the market (such as bonds that have aged significantly)
- Fed ownership is limited at shorter maturities

Concluding Thoughts on Buybacks

- Buyback program is operationally feasible and provides benefits discussed above
- Potential structure of buyback program
  - Start with a program of modest size, conducted as a regular set of operations
  - Size of purchases would vary through the year to achieve the objectives above
  - Focus a considerable portion of purchases on securities with relatively short remaining maturities
  - But also consider some amount of purchases across the curve
  - If program proves useful, could move towards larger sizes and greater variation
- Arguments in favor:
  - Build the flexibility to smooth maturity peaks and manage variation in bills/cash balances
  - Enhance the liquidity of off-the-run issues
  - Help implement any decisions on the desired structure of outstanding debt
- Arguments against:
  - No clear need to raise on-the-run issue sizes at this time
  - As outlook swings towards underfunding, buybacks will exacerbate need to raise issue sizes
  - Bills are currently serving as an effective tool for addressing short-run variation in funding needs